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Original research

A structured, group-based diabetes self-management education (DSME) programme for people, families and whanau with type 2 diabetes (T2DM) in New Zealand: An observational study

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ABSTRACT

Background: Group-based diabetes self-management education (DSME) programmes have been shown to be effective. A programme tailored for the unique social and ethnic environment of New Zealand (NZ) was developed using concepts from internationally developed programmes.
Aim: To assess the effectiveness of a 6 week New Zealand specific DSME programme.
Methods: In this observational study people with type 2 diabetes (aged 18–80 years) from diverse cultural backgrounds were recruited from primary care. Seventeen groups of six education sessions were run. Clinical data were collected from primary care at baseline, 3, 6 and 9 months. Participants also completed a self-administered questionnaire on diabetes knowledge, and self-management behaviours.

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Maori
Pacific
Indian

Results: 107 participants, mean age 56.7 ± 11.3 years and mean duration of diabetes 7.5 ± 7 years (NZ European (44%), Maori (24%), Pacific (16%) and Indian (16%)), were enrolled. Confidence in self-managing diabetes, regular examination of feet, physical activity levels and smoking rates all improved. Glycaemic control improved between baseline and 6 months (HbA_{1C} 64.9 ± 20.0 mmol/mol to 59.9 ± 13.9 mmol/mol ($p < 0.05$) (baseline 8.07% ± 1.80, 6 months 7.62% ± 1.25)), but was no different to baseline at 9 months. Systolic BP reduced from 131.9 ± 16.4 to 127.4 ± 18.2 mmHg ($p < 0.05$) at 6 months, but increased to baseline levels by 9 months. Diastolic BP, triglycerides and urine microalbumin:creatinine ratio were significantly reduced at 3, 6 and 9 months.

Conclusion: A group-based DSME programme designed specifically for the NZ population was effective at improving aspects of diabetes care at 6 months. The attenuation of these improvements after 6 months suggests a refresher course at that time may be beneficial.

1. Background

In New Zealand type 2 diabetes prevalence is 7.0% with higher rates among Maori (9.8%), and particularly Pacific peoples (15.4%), compared with other New Zealanders (6.1%) [1]. Self-management is a recommended goal in long term conditions, and has been shown to be one of the effective quality improvement strategies for diabetes services [2]. However a structured self management education programme is not made available to most people with type 2 diabetes. Furthermore, when available, after attending a programme people living with diabetes frequently do not achieve optimal control of their condition, particularly in respect to the adoption of recommended lifestyle patterns [3]. Effective delivery of diabetes education is necessary to facilitate behaviour changes required for patients to actively manage and improve their diabetes [4]. Clinical management and advice within the traditional consultation setting is generally not sufficient on its own to support patients to achieve control of their diabetes.

Internationally there is a move towards group-based education programmes for people with type 2 diabetes that are founded on cognitive reframing [5]. Group-based diabetes self-management education (DSME) programmes such as DAFNE in type 1 diabetes [6], and DESMOND [5] and X-PERT [7] in type 2 diabetes, have been shown to be effective at increasing patient self-management skills with resultant improvements in glycaemic control and blood pressure, with reduced risk of diabetes related complications, cardiovascular disease and death [8].

DAFNE, DESMOND and X-PERT were developed in particular settings and it cannot be assumed that the benefits of these programmes will be achieved if directly adopted by another country with a different social and ethnic structure. None of these programmes have been developed or critically appraised in New Zealand, and more particularly with respect to Maori or Pacific populations. We developed a programme, "Diabetes, Your Life, Your Journey", tailored for the unique social and ethnic environment of New Zealand using concepts from internationally developed programmes The aim of this observational study was to assess the effectiveness of a 6-week New Zealand centred group-based DSME toolkit delivered in three different New Zealand settings on intermediate clinical outcomes, and lifestyle and psychosocial measures.

2. Methods

2.1. Study design

This was a 9 month observational study which assessed the effectiveness of a 6-week group-based DSME intervention at 6 months and 9 months.

2.2. Setting

The study was carried out in three different settings in New Zealand; Wellington, the Wairarapa and Oamaru. Wellington is the capital city of New Zealand with an ethnically diverse population. The Wairarapa is a rural region with several small towns and a large agricultural and horticultural community with an ethnically diverse population. Oamaru is a provincial rural town, with a predominantly New Zealand European population.

2.3. Participants

Participants were included if they had established type 2 diabetes (World Health Organisation criteria) [9], were aged between 18 and 80 years, and had a body mass index (BMI) of at least 27 kg/m^2. Participants were excluded if they were pregnant or had been diagnosed with a terminal illness. They were recruited during 2009 and 2010 through primary care networks, community diabetes organisations and through secondary care specialist diabetes nurses and physicians. Flyers, advertising and opportunistic direct approach from health care professionals during consultations were all used.

2.4. Intervention

From a review of existing literature a toolkit for group-based education for self management of type 2 diabetes was developed and piloted [10]. The programme was entitled "Diabetes, Your Life, Your Journey" (see online Appendix 1). The structure of the programme was mainly influenced by the X-PERT programme [7]. In brief, the essential elements of the programme were: (1) Group-based, and include family/whanau (whanau is a Maori language word meaning extended family or family community). (2) Able to be delivered in a primary care or